



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/044,235	01/11/2002	Peter J. Black	PA010122	8976

23696 7590 06/01/2004

Qualcomm Incorporated
Patents Department
5775 Morehouse Drive
San Diego, CA 92121-1714

EXAMINER

CORRIELUS, JEAN B

ART UNIT	PAPER NUMBER
----------	--------------

2631

DATE MAILED: 06/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/044,235

Applicant(s)

BLACK ET AL.

Examiner

Jean B Corrielus

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 April 2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-36 and 38-49 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-14, 21-31, 36 and 39-49 is/are allowed.
- 6) ☒ Claim(s) 15-17, 20, 32, 33 and 38 is/are rejected.
- 7) ☒ Claim(s) 18, 19, 34 and 35 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
- a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- ☐ Interview Summary (PTO-413) Paper No(s). _____
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: _____

DETAILED ACTION

Allowable Subject Matter

1. The indicated allowability of claims 15-17, 20, 32, 33 and 37 is withdrawn in view of the newly discovered reference(s) to Cox et al and previously cited reference to Sih et al. Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 32 and 33 are rejected under 35 U.S.C. 102(e) as being anticipated by Cox et al US Patent No. 6,693,953.

Cox discloses a method and apparatus comprising the steps of estimating a signal quality of a signal instance see col. 5, lines 60-66; determining inherently a current operating mode for a DLL used to generates the sample timing for the signal instance, wherein the DLL is operable in one of a plurality of modes see col. 5, lines 47-59; switching to a new mode if the estimated signal quality

exceeds a threshold value see col. 5, lines 5-9 and col. 6, lines 9-20, col. 7, lines 2-11.

As per claim 33 the plurality of modes include interminant mode (normal mode) and an enhanced mode (all time mode) see col. 5, lines 50-52.

4. Claims 15-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Sih et al US patent No. 6,608,858.

Sih et al discloses a method and apparatus fig.7 comprising the steps of deriving an error (error metric) for each of a plurality of signal instances using finger circuits 700; combining errors (error metrics) in circuit block 710 to generate a resulting weighted average signal (composite error metric); and updating a loop filter 720 and using the VCO 740 to derive the sample timing for the plurality of signal instances.

As per claim 16, the error signal is scaled by a weight and combined in circuit block 710 see col. 6, lines 20-26.

As per claim 17, the weight is determined based on the quality of the signal instance see col. 6, lines 22-23

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject

Art Unit: 2631

matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sih et al US patent No. 6,608,858.

Sih et al discloses every feature of the invention, as applied to claim 15 above, but fails to explicitly teach that an early/late discriminator is used to generate the error signal. However, using an early/late discriminator to generate error signal is old and well established in the art. Given that, it would have been obvious to one skill in the art to incorporate such a device in Sih et al in order to enhance the system accuracy.

7. Claim 38 is rejected under 35 U.S.C. 103(a) as being unpatentable over Gurantz et al US patent No. 5,550,869 in view of Sih et al US Patent No. 6,608,858.

Gurantz et al discloses a system comprising element 150 functionally equivalent to the claimed pilot processor operative to derive an error metric for of a plurality of signals (I and Q) received via an antenna 10, wherein the error metric for each signal is indicative of error in the sampling for the signals see col. 11, lines 9-10 and lines 29-31 a loop filter (164, 152 and 154) operative to combine the error metrics in adder 164 for the plurality of signals to provide a composite error metric see col. 11, lines 31-34 and to accumulate in integrator 154 the composite metric, see col. 11, lines 13-14 and wherein the sampling

Art Unit: 2631

timing for the plurality of signals is derived based on the output of the loop filter (164, 152 and 154) see col. 11, lines 25-28.

However, Gurantz does not explicitly teach the scaling of each error metric with a respective weight and to combine the scaled signal. In the same field of endeavor, sih et al teaches the scaling of each error metric with a respective weight and to combine the scaled signal see col. 6, lines 20-25. Given that, it would have been obvious to one skill in the art to incorporate such a teaching in Gurantz et al so as to enhance the resolution of the system.

Allowable Subject Matter

8. Claims 1-14, 21-31, 36 and 39-49 are allowed.

9. Claim 18, 19, 34 and 35 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

10. **Any response to this action should be mailed to:**

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

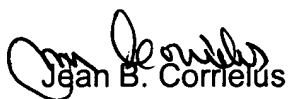
(703) 872-9314

(for informal or draft communications, please label
"PROPOSED" or "DRAFT")

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal
Drive, Arlington, VA., Sixth Floor (Receptionist).

11. Any inquiry concerning this communication or earlier communications
from the examiner should be directed to Jean B. Corrielus whose telephone number is
(703) 305-4023. The examiner can normally be reached on Monday-Thursday from 7:00
A.M. to 5:30 P.M.

Any inquiry of a general nature or relating to the status of this application
or proceeding should be directed to the Group receptionist whose telephone
number is (703) 305-3800.


Jean B. Corrielus

Primary Examiner

TC-2600

5/26/09